CLAIMS

What is claimed is:

1. A liquid ink composition comprising:

a colorant;

a charge control agent to regulate electrostatic properties of the colorant; and

an organosol to disperse and bind the colorant and the charge control agent,

in which the colorant is coated with a thermoplastic resin to improve binding to the organosol.

2. The liquid ink composition according to claim 1, wherein the colorant coated with the thermoplastic resin is coated with the thermoplastic resin in a range of 150 weight parts to 350 weight parts based on 100 weight parts of the colorant.

3. The liquid ink composition according to claim 1, wherein the organosol is contained in a range of 180 weight parts to 250 weight parts based on 100 weight parts of the colorant coated with the thermoplastic resin.

4. The liquid ink composition according to claim 1, wherein the colorant is carbon black.

5. The liquid ink composition according to claim 1, wherein the thermoplastic resin to coat the colorant is any one selected from the group consisting of polyethylene vinylacetates, polyethylene vinylacetate/acid terpolymers, polyethylene acrylic acid copolymers, polyethylene methacrylic acid copolymers, polyethylene acrylate copolymers, polyethylene methacrylate copolymers, polyacrylate resins, polymethacrylate resins, polystyrene acrylic acid copolymers, polystyrene methacrylic acid copolymers, polystyrene acrylate copolymers, polystyrene methacrylate copolymers, rosin ester resins and modified rosins.

6. The liquid ink composition according to claim 1, wherein the organosol comprises:

a carrier liquid; and

a graft copolymer comprising a (co)polymer steric stabilizer covalently bonded to a thermoplastic (co)polymeric core which is insoluble in the carrier liquid,

in which the thermoplastic (co)polymeric core contains at least one unit derived from polymerizable monomer selected from the group consisting of (meth)acrylate monomers having aliphatic amino radicals, nitrogen containing heterocyclic vinyl monomers, N-vinyl substituted ring-like amide monomers, aromatic substituted ethylene monomers containing amino radicals and nitrogen-containing vinylether monomers.

7. A method to produce a liquid ink composition comprising:

coating a colorant with a thermoplastic resin; and

mixing and dispersing the coated colorant, an organosol and a charge control agent.

8. The method to produce a liquid ink composition according to claim 7, wherein the colorant is carbon black.

9. The method according to claim 7, wherein the thermoplastic resin utilized to coat the colorant is any one selected from the group consisting of polyethylene vinylacetates, polyethylene vinylacetate/acid terpolymers, polyethylene acrylic acid copolymers, polyethylene methacrylic acid copolymers, polyethylene acrylate copolymers, polyethylene methacrylate copolymers, polyacrylate resins, polymethacrylate resins, polystyrene acrylic acid copolymers, polystyrene methacrylic acid copolymers, polystyrene acrylate copolymers, polystyrene methacrylate copolymers, rosin ester resins and modified rosins.

10. The method according to claim 7, wherein the organosol comprises:

a carrier liquid; and

a graft copolymer comprising a (co)polymeric steric stabilizer covalently bonded to a thermoplastic (co)polymeric core which is insoluble in the carrier liquid,

in which the thermoplastic (co)polymeric core contains at least one unit derived from polymerizable monomer selected from the group consisting of (meth)acrylate monomers having aliphatic amino radicals, nitrogen containing heterocyclic vinyl monomers, N-vinyl substituted ring-like amide monomers, aromatic substituted ethylene monomers containing amino radicals and nitrogen-containing vinylether monomers.

11. A liquid ink composition comprising:

a colorant having a coating;

a charge control agent to regulate electrostatic properties of the colorant; and

an organosol to disperse and bind the colorant and the charge control agent.

12. The liquid ink composition of claim 11, wherein the coating of the colorant is a thermoplastic resin.

13. The liquid ink composition according to claim 12, wherein the colorant having a coating of the thermoplastic resin is coated with the thermoplastic resin in a range of 150 weight parts to 350 weight parts based on 100 weight parts of the colorant.

14. The liquid ink composition according to claim 11, wherein the organosol is contained in a range of 180 weight parts to 250 weight parts based on 100 weight parts of the colorant having the coating of the thermoplastic resin.

15. The liquid ink composition according to claim 11, wherein the colorant is carbon black.

16. The liquid ink composition according to claim 12, wherein the thermoplastic resin utilized to coat the colorant is any one selected from the group consisting of polyethylene vinylacetates, polyethylene vinylacetate/acid terpolymers, polyethylene acrylic acid copolymers, polyethylene methacrylic acid copolymers, polyethylene acrylate copolymers, polyethylene methacrylate copolymers, polyacrylate resins, polymethacrylate resins, polystyrene acrylic acid copolymers, polystyrene methacrylic acid copolymers, polystyrene acrylate copolymers, polystyrene methacrylate copolymers, rosin ester resins and modified rosins.

17. The liquid ink composition according to claim 11, wherein the organosol comprises:

a carrier liquid; and

a graft copolymer comprising a (co)polymer steric stabilizer covalently bonded to a thermoplastic (co)polymeric core which is insoluble in the carrier liquid,

in which the thermoplastic (co)polymeric core contains at least one unit derived from polymerizable monomer selected from the group consisting of (meth)acrylate monomers having aliphatic amino radicals, nitrogen containing heterocyclic vinyl monomers, N-vinyl substituted ring-like amide monomers, aromatic substituted ethylene monomers containing amino radicals and nitrogen-containing vinylether monomers.